IN THE CLAIMS

Listing of the claims:

1. (original) Method for handling data on a data storage apparatus (1) comprising a data storage medium (2), in particular for handling data on a disc drive (1) comprising a data storage disc (2) , the medium having a user area (UA) and a spare area (16, SA, 22a, 22b) defined thereon,
wherein,

upon detection of a defect (B) on the medium (2), in a first step the data assigned to the defect (B) are allocated into the spare area (SA, 16, 22a, 22b),

characterised in that

- in a further step, information is provided about the size of a contiguous free region (F) in the user area (UA), and
- the data allocated in the spare area (SA, 16, 22a, 22b) are at least partially re-allocated into the contiguous free region (F) in the user area (UA) if the size of the contiguous free region (F) exceeds or is equal to a determined threshold size.

2. (original) Method as claimed in claim 1, characterised in that the information is provided by a host (7) connected to the apparatus (1) by an interface.

3. (previously presented) Method as claimed in claim 1, characterised in that the threshold size is determined in correlation with at least one logical consecutive sequence of the data mapped in the spare area (16, SA, 22a, 22b).

4. (previously presented) Method as claimed in claim 1, characterised in that the threshold size is essentially equal to the size of the largest contiguous free region in the user area.

5. (previously presented) Method as claimed in claim 1, characterised in that the information is provided by a controller (6) comprised by the apparatus (1).

6. (previously presented) Method as claimed in claim 1, characterised in that a plurality of spare area arrays (SA, 22a, 22b) is provided and each of the arrays respectively is assigned to essentially each of a plurality of format features, in particular a track (8) and in particular serves as a contiguous free region in the user area.

7. (previously presented) Method as claimed in claim 1, characterised in that the data are re-allocated by slipping.

8. (previously presented) Method as claimed in claim 1, characterised in that the re-allocation and re-mapping of data from the spare area (SA, 22a, 22b) to the user area (UA) in the further step is repeated until all data of at least one logical consecutive sequence is re-allocated in the contiguous free region (F) in the user area (UA).

9. (previously presented) Method as claimed in claim 1, using an error correction code being based on physical block addresses (PBA), in particular instead of logical block addresses (LBA).

10. (previously presented) Method as claimed in claim 1, characterised in that defect data are mapped or re-mapped to a preferred predetermined address area.

11. (previously presented) Method as claimed in claim 1, characterised in that a protocol between the storage apparatus (1) and a host (7) records information on the re-allocation of data, in particular on re-map-, -map- and slip-data.

12. (previously presented) Method as claimed in claim 1, being adapted to be done on-the-fly, in particular by being essentially controlled solely by a storage apparatus controller (6).

13. (previously presented) Method as claimed in claim 1, adapted to be implemented in a de-fragmentation process, in particular by being at least partially controlled by a host (7) during an occasional de-fragmentation process.

14. (currently amended) Data storage apparatus ~~(1)~~ comprising a data storage medium ~~(2)~~, in particular a disc drive ~~(1)~~ comprising a data storage disc ~~(2)~~ formatted in a predetermined format architecture comprising a plurality of at least one format feature, in particular selected from the group consisting of: zones, cylinders and tracks, and having a user area and a spare area defined thereon, characterised in that the format architecture provides a plurality of spare area arrays, each of the spare area arrays being respectively assigned to essentially each of the plurality of the at least one format feature.

15. (currently amended) Data storage apparatus as claimed in claim 14, characterised in that the format architecture provides a plurality of spare area arrays ~~(6A, 22a, 22b)~~, wherein each of the spare area arrays ~~(6A, 22a, 22b)~~ are respectively assigned to essentially each of a plurality of tracks ~~(8)~~.

16. (currently amended) Data storage apparatus as claimed in claim 14 characterised in that the apparatus ~~(1)~~ further comprises a read/write-head ~~(3)~~, a drive to rotate the medium and a servo to move the head, a controller ~~(6)~~ having a control electronics, a microprocessor and a memory ~~(RAM, ROM)~~ and an interface for connecting the apparatus ~~(1)~~ to a host ~~(7)~~.

17. (previously presented) Apparatus for reproducing audiovisual information, comprising the data storage apparatus

according to claim 14.

18. (new) Data storage apparatus

means for writing information on a data storage medium having a user area and a spare area defined thereon,

means for allocating into the spare area, data assigned to portion user area having a medium defect, upon detection of the defect on the medium,

means for providing information about the size of a contiguous free region in the user area, and

means for at least partially re-allocating the data allocated in the spare area into the contiguous free region in the user area if the size of the contiguous free region exceeds or is equal to a determined threshold size.

19. (new) The apparatus of claim 1, comprising an interface for receiving the information from a host connected to the interface.

20. (new) The apparatus of claim 1 wherein the threshold size is determined in correlation with at least one logical consecutive sequence of the data mapped in the spare area.

21. (new) The apparatus of claim 1 wherein the threshold size is essentially equal to the size of the largest contiguous free region in the user area.

22. (new) The apparatus of claim 1 wherein the information is provided by a controller comprised by the apparatus.

23. (new) The apparatus of claim 1 wherein a plurality of spare area arrays is provided and each of the arrays respectively is assigned to essentially each of a plurality of format features, in particular a track and in particular serves as a contiguous free region in the user area.

24. (new) The apparatus of claim 1 wherein the data are re-allocated by slipping.

25. (new) The apparatus of claim 1 wherein the re-allocation and re-mapping of data from the spare area to the user area in the further step is repeated until all data of at least one logical consecutive sequence is re-allocated in the contiguous free region in the user area.

26. (new) The apparatus of claim 1 wherein the information is written using an error correction code being based on physical block addresses, in particular instead of logical block addresses.

27. (new) The apparatus of claim 1 wherein defect data are mapped or re-mapped to a preferred predetermined address area.

28. (new) The apparatus of claim 1 wherein a protocol between the storage apparatus and a host records information on the re-allocation of data, in particular on re-map-, -map- and slip-data.

29. (new) The apparatus of claim 1 wherein the re-mapping is done on-the-fly, in particular by being essentially controlled solely by a storage apparatus controller .

30. (new) The apparatus of claim 1 wherein the re-mapping is implemented in a de-fragmentation process, in particular by being at least partially controlled by a host during an occasional de-fragmentation process.